Contents

Aarnes, H.: Regulation of Threonine Biosynthesis in Barley Seedlings (*Hordeum vulgare* L.) 185
apRees, T., s. Leegood, R.C. 275
Bentwood, B.J., Cronshaw, J.: Cytochemical Localization of Adenosine Triphosphatase in the Phloem of *Pisum sativum* and its Relation to the Function of Transfer Cells . . . 111
Böttger, M., Engvild, K.C., Soll, H.: Growth of *Avena* Coleoptiles and pH Drop of Protoplast Suspensions Induced by Chlorinated Indoleacetic Acids 89
Caers, L.I., s. Peumans, W.J., et al. 171
Carlier, A.R., s. Peumans, W.J. et al. 171
Chang, W., Hsing, Y.: DPX-3778 Promotes Proliferation of Tobacco Callus in Vitro 293
Chen, T.-H., Jaffe, L.F.: Effects of Membrane Potential on Calcium Fluxes of *Pelvetia* Eggs 63
Christen, U., s. Schmidt, A. 239
Cronshaw, J., s. Bentwood, B.J. 111
De Langhe, E., Kosmidou-Dimitropoulou, S., Waterkeyn, L.: Effect of Hormones on Nucleolar Growth and Vacuolation in Elongating Cotton Fibers 269
Del Río, L.A., Sevilla, F., Gómez, M., Yañez, J., López, J.: Superoxide Dismutase: An Enzyme System for the Study of Micronutrient Interactions in Plants 221
Dohrmann, U., Hertel, R., Kowalik, H.: Properties of Auxin Binding Sites in Different Subcellular Fractions from Maize Coleoptiles 97
Donk, J.A. van der, Livingston, G.K., Linskens, H.F., Donk, M. van der: The Regulation of Pollen Tube Growth in Douglas-Fir Following High Doses of Ionizing Radiation 283
Donk, M., van der, s. Donk, J.A., van der, et al. 283
Edwards, G.E., s. Ku, S.-B. 1
Engvild, K.C., s. Böttger, M. et al. 89
Erismann, K.H., s. Grumbach, K.H. et al. 37
Feller, U., Soong, T.-S.T., Hageman, R.H.: Patterns of Proteolytic Enzyme Activities in Different Tissues of Germinating Corn (*Zea mays* L.) 155
Flowers, T.J., s. Hall, J.L. et al. 59
Fuldner, K.-H., s. Wild, A. et al. 45
Geijn, S.C. van de, s. Veen, H. 93
Gómez, M., s. Del Río, L.A. et al. 221
Gordon, W.R., Schwemmer, S.S., Hillman, W.S.: Nickel and the Metabolism of Urea by *Lemna paucicostata* Hegelm. 6746 265
Grout, B.W.W., s. Willison, J.H.M. 57
Grumbach, K.H., Lichtenthaler, H.K., Erismann, K.H.: Incorporation of $^{14}CO_2$ in Photosynthetic Pigments of *Chlorella pyrenoidosa* 37
Hageman, R.H., s. Feller, U. et al. 155
Hall, J.L., Harvey, D.M.R., Flowers, T.J.: Evidence for the Cytoplasmic Localization of Betaine in Leaf Cells of *Suaeda maritima* 59
Halliwell, B.: Lignin Synthesis: The Generation of Hydrogen Peroxide and Superoxide by Horseradish Peroxidase and its Stimulation by Manganese (II) and Phenols 81
Harvey, D.M.R., s. Hall, J.L. et al. 59
Hertel, R., s. Morath, M. 31
Hertel, R., s. Dohrmann, U. et al. 97
Hewitt, E.J., s. Mann, A.F. et al. 261
Hillman, W.S., s. Gordon, W.R. et al. 265
Hogetsu, T., Shibaoka, H.: The Change of Pattern in Microfibril Arrangement on the Inner Surface of the Cell Wall of *Closterium acerosum* during Cell Growth 7
Hogetsu, T., Shibaoka, H.: Effects of Colchicine on Cell Shape and on Microfibril Arrangement in the Cell Wall of *Closterium acerosum* 15
Hopp, H.E., s. Pont Lezica, R. et al. 177
Horgan, R., s. Wang, T.L. 151
Hsing, Y., s. Chang, W. 293
Hucklesby, D.P. s. Mann, A.F. et al. 261
Jaffe, L.F., s. Chen, T.-H. 63
Jones, R.L., s. Nash, L.J. et al. 143
Kaniuga, Z., Sochanowicz, B., Ząbek, J., Krzystyniak, K.: Photosynthetic Apparatus in Chilling-sensitive Plant I. Reactivation of Hill Reaction Activity Inhibited on the Cold and Dark Storage of Detached Leaves and Intact Plants 121
Kaniuga, Z., Michalski, W.: Photosynthetic Apparatus in Chilling-sensitive Plants. II. Changes in Free Fatty Acid Composition and Photoperoxidation in Chloroplasts following Cold Storage and Illumination of Leaves in Relation to Hill Reaction Activity 129
Kende, H., s. Sussman, M.R. 251
Kietzmann, I., s. Wild, A. et al. 45
Kleinig, H., Steinki, C., Kopp, C., Zaar, K.: Oleosomes (Spherosomes) from *Daucus carota* Suspension Culture Cells 233
Komamine, A., s. Takeuchi, Y. 227
Kopp, C., s. Kleinig, H. et al. 233
Kosmidou-Dimitripoulou, S., s. De Laughe, E. et al. . . . 269
Kowalik, H., s. Dohrmann, U. et al. 97
Krieger, K.G.: Early Time Course Specificity of Auxin Effects on Turgor Movement of the Bean Pulvinus 107
Krzystyniak, K., s. Kaniuga, Z. et al. 121
Ku, S.-B., Edwards, G.E.: Oxygen Inhibition of Photosynthesis. III. Temperature Dependence of Quantum Yield and its Relation to O_2/CO_2 Solubility Ratio 1
Kuo, J., s. Morrison, I.N. et al. 19
Leegood, R.C., ap Rees, T.: Dark Fixation of CO_2 during Gluconeogenesis by the Cotyledons of *Cucurbita pepo* L. 275
Lichtenthaler, H.K., s. Grumbach, K.H. et al. 37
Linskens, H.F., s. Donk, J.A. van der, et al. 283
Livingston, G.K., s. Donk, J.A. van der, et al. 283
López, J., s. Del Río, L.A. et al. 221
Lurie, S.: The Effect of Wavelength of Light on Stomatal Opening 245
Mann, A.F., Hucklesby, D.P., Hewitt, E.J.: Sources of Reducing Power for Nitrate Reduction in Spinach Leaves . 261
Michalski, W., s. Kaniuga, Z. 129
Miller, C.O.: Cytokinin Modification of Metabolism of *p*-Coumaric Acid by a Cell Suspension of Soybean (*Glycine max* (L.) Merrill) 193
Moll, W.A.W., Stegwee, D.: The Activity of Triton X-100 Soluble Chlorophyllase in Liposomes 75
Morath, M., Hertel, R.: Lateral Electrical Potential Following Asymmetric Auxin Application to Maize Coleoptiles 31
Morrison, I.N., O'Brien, T.P., Kuo, J.: Initial Cellularization and Differentiation of the Aleurone Cells in the Ventral Region of the Developing Wheat Grain 19
Nash, L.J., Jones, R.L., Stoddart, J.L.: Gibberellin Metabolism in Excised Lettuce Hypocotyls: Response to GA_9 and the Conversion of [^{3}H]GA_9 143
O'Brien, T.P., s. Morrison, I.N. et al. 19
Peumans, W.J., Carlier, A.R., Caers, L.I.: Sedimentation Properties of Preformed Messenger Particles in Dry Rye Embryo Extracts 171
Pont Lezica, R., Romero, P.A., Hopp, H.E.: Glucosylation of Membrane-bound Proteins by Lipid-linked Glucose . 177
Pope, D.G.: Does Indoleacetic Acid Promote Growth via Cell Wall Acidification? 137
Romero, P.A., s. Pont Lezica, R. et al. 177
Schmidt, A., Christen, U.: A Factor-dependent Sulfotransferase Specific for 3′-Phosphoadenosine-5′-Phosphosulfate (PAPS) in the Cyanobacterium *Synechococcus* 6301 . . . 239
Schröter, K.: Asymmetrical Jelly Secretion of Zygotes of *Pelvetia* and *Fucus*: An Early Polarization Event 69
Schwemmer, S.S., s. Gordon, W.R. et al. 265
Sevilla, F., s. Del Río, L.A. et al. 221

Shibaoka, H., s. Hogetsu, T. 7
Shibaoka, H., s. Hogetsu, T. 15
Sochanowicz, B., s. Kaniuga, Z. et al. 121
Soll, H., s. Böttger, M. et al. 89
Soong, T.-S.T., s. Feller, U. et al. 155
Stegwee, D., s. Moll, W.A.W. 75
Steinki, C., s. Kleinig, H. et al. 233
Stoddart, J.L., s. Nash, L.J. et al. 143
Sussman, M.R., Kende, H.: In vitro Cytokinin Binding to a Particulate Fraction of Tobacco Cells 251
Takeuchi, Y., Komamine, A.: Composition of the Cell Wall Formed by Protoplasts Isolated from Cell Suspension Cultures of *Vinca rosea* 227
Tautvydas, K.J.: Isolation and Characterization of an Extracellular Hydroxyproline-rich Glycoprotein and a Mannose-rich Polysaccharide from *Eudorina californica* (Shaw) 213
Theimer, R.R., s. Wanner, G. 163
Trostmann, U., s. Wild, A. et al. 45
Ullrich, C.-H.: Continuous Measurement of Initial Curvature of Maize Coleoptiles Induced by Lateral Auxin Application 201
Veen, H., Geijn, S.C. van de: Mobility and Ionic Form of Silver as Related to Longevity of Cut Carnation . . . 93
Wang, T.L., Horgan, R.: Dihydrozeatin Riboside, a Minor Cytokinin from the Leaves of *Phaseolus vulgaris* L. . . . 151
Wanner, G., Theimer, R.R.: Membranous Appendices of Spherosomes (Oleosomes). Possible Role in Fat Utilization in Germinating Oil Seeds 163
Waterkeyn, L., s. De Langhe, E. et al. 269
Wild, A., Trostmann, U., Kietzmann, I., Fuldner, K.-H.: Development of the Photosynthetic Apparatus during Light-dependent Greening of a Mutant of *Chlorella fusca* 45
Willison, J.H.M., Grout, B.W.W.: Further Observations on Cell-Wall Formation around Isolated Protoplasts of Tobacco and Tomato 57
Yañez, J., s. Del Rio, L.A. et al. 221
Zaar, K., s. Kleinig, H. et al. 233
Ząbek, J., s. Kaniuga, Z. et al. 121
Zeevaart, J.A.D.: Flower Formation in the Short-day Plant *Kalanchoë* by Grafting with a Long-day and a Short-long-day *Echeveria* 289

Index of Key Words

Abscisic acid 269
Action spectrum 245
Acyl-CoA hydrolase 233
Aleurone 19
Aminopeptidases 155
ATPase 111
Auxin 31, 89, 107, 137, 201, 269
Auxin binding 97
Avena 89
Benzylaminopurines substituted 193
Betaine 59
Brassica 163
Calcium fluxes 63
Callus culture 293
Carboxypeptidases 155
Carotenoids 37
Catharanthus 227
Cell culture 227, 233, 251
Cell elongation 137, 143, 201, 269
Cell-free translation 171
Cell shape 7, 15
Cell wall 7, 15, 53, 81, 227, 231
Cellulose 53
Chilling 121, 129
Chlorella 37
Chlorophyll *a* biosynthesis 75
Chlorophyllase 75
Chlorophylls 37
Chloroplasts 129
Cinnamate 193
Citrullus 163
Closterium 7, 15
CO_2 dark fixation 275
Colchicine 15
Cold storage 121, 129
Coleoptiles 31, 97, 201
Colony wall 231
Cotyledons 275
Coumarate 193
Cucumis 121, 129
Cucurbita 275
Cyanobacteria 239
Cytochrome f 45
Cytokinin 151, 193, 251
Daucus 233
Development, photosynthetic apparatus 45
Dianthus 93
DPX-3778 293
Echeveria 289
Electrical Potential 31
Endopeptidases 155
Endosperm 19
Eudorina 231
Fibers 269
Floral stimulus 289
Flower formation 289
Flower longevity 93
Fucoid eggs 63
Fucus 69
Funaria 251
Fusicoccin 201
Germination (seeds) 155
Gibberellin 143, 269
Glucans 227
Gluconeogenesis 275
Glycine 193
Glycoprotein 231
Gossypium 269
Grafting 289
Greening mutant 45
Halophytes 59
Helianthus 89, 163
Hill reaction 121
Homoserine kinase 185
Hordeum 185
Hormone binding 251
Hydrogen peroxide 81
Hydroxyproline 231
Ion fluxes 63
Ion mobility 93
Ion uptake 245
Jelly secretion 69
Kalanchoë 289
Lactuca 143
Leaf movement 107
Leaf temperature 1
Leaves 151
Lectins 177
Lemna 265
Lycopersicon 121, 129
Lycopersicum 53
Lipolysis 163
Lignification 81
Liposomes 75
Malate 245
Manganese 221
Mannose 231
Membrane potential 63
Membranous appendices 163
Microfibrils 7, 15
Micronutrient interactions 221
Microtubules 7, 15
mRNA 283
Multiple receptors 97
NADH 261
Nickel 265
Nicotiana 53, 251, 293
Nitrate reductase 261
Nucleolus 269
Oleosomes 233
Oxygen (photosynthesis) 1
Pelvetia 63, 69
Peroxidase 81
P-700 45
pH drop 89
Phaseolus 75, 107, 121, 129, 151
Phloem 111
Photochemical activities 45
Photoperiodism 289
Photosynthesis 1, 121, 129
Photosynthetic pigments 37
Photosynthetic unit 45
Pisum 89, 111, 177, 221
Plasma membrane 53
Plasmalemmasomes 53
Polarization 69
Pollen tube 283
Polyprenyl-sugars 177
Polysaccharide 231
Polysaccharides (extracellular) 227
Performed mRNA 171
Proteases 155
Protein glucosylation 177
Proton secretion 137
Protoplasts 53, 227
Protplast suspension 89
Pseudotsuga 283
Pulvinus 107
Raphanus 53
Radiation (X-rays) 283
Reductant 261
Respiration 265
Ribulose bisphosphate carboxylase 45
RUDP carboxylase 275
Rye embryos 171
Salt tolerance 59
Seedling development 155
Sedimentation behavior 171
Silver (ionic forms) 93
Spherosomes (oleosomes) 163
Spinacea 261
Starch 245
Stomata 245
Suaeda 59
Sulfate reduction 239
Sulfotransferase 239
Superoxide 81
Superoxide dismutase 221
Synechococcus 239
Temperature (chilling) 121, 129
Temperature (photosynthesis) 1
Thioredoxin 239
Threonine synthase 185
Tissue culture 193, 293
Tonoplast 97
Transfer cells (phloem) 111
Translation (mRNA) 283
Translocation (short-distance) 111
Triacylgycerol turnover 233
Triazinone 293
Triticum 1, 19, 137
Turgor movement 107
Turnover 37
Urea metabolism 265
Vicia 245
Vinca 227
X-rays 283
Zea 1, 31, 97, 155, 201